

SCHEDULE E: SERVICE DEFINITION FOR CLOUD STORAGE S4 SERVICE

1. Cloud Storage S4 Service Description

Exponential-e’s Cloud Storage S4 Service is a software-defined, cloud-scale, object storage platform. Exponential-e’s Cloud Storage S4 Service provides virtualized software defined storage resources to the Partner/End User allowing the Partner/End User to create and configure their own storage resources via a portal. Exponential-e uses Tier 3 data centres to house the underlying hardware and virtualisation technology which deliver virtual storage resources to multiple customers. Exponential-e shall manage all hardware and software defined storage required to provide the Cloud Storage S4 Service and the portal to enable the Partner/End User to manage and view the virtual resources. The Partner/End User shall be responsible for managing the Stored Data and any software and applications utilizing the Stored Data. Partner/End User access to Stored Data is via the following protocols: Object, HDFS and NFS.

Protocols		Supported	Interoperability
Object	S3	Additional capabilities like Byte range Updates and Rich ACLS	HDFS, NFS
	Atmos	Version 2.0	N/A
	Swift	Version 2.0 APIs and Swift Authentication	HDFS, NFS
	CAS	SDK version 3.1.544 or later	N/A
HDFS		Hadoop version 2.7 compatibility	S3, Swift, NFS
NFS		NFS version 3	S3, Swift, HDFS

The Service is made up of:

- Object Storage – amount of space allocated by the Partner/End User when creating a storage resource, measured in GB (1,000,000,000 bytes)

The Service is available in a Protected Zone or Geo-Replicated Zone configuration as follows:

- Protected Zone: an Object Storage instance located in a single Exponential-e data centre.
- Geo-replicated Zone: an Object Storage instance located across two geographically separate Exponential-e data centres with a “high-availability” configuration.

2. Cloud Storage S4 Service Demarcation Point (SDP)

The Cloud Storage S4 SDP is the point up to which (i) Exponential-e’s Cloud Storage S4 Service obligations apply and (ii) the Service Level Agreement covers. The Cloud Storage S4 SDP is the network-facing ports on the Exponential-e core switches at the Cloud Storage S4 Zone.

3. Target Service Commencement Date

Cloud Storage S4 Service 5 Working Days*

** From order acceptance. Leadtime is subject to confirmation if changes are made by the Partner/End User and/or further information comes to light which would have affected the initial design. Exponential-e shall use reasonable endeavors to ensure that the Partner/End User may connect to the Cloud Storage S4 portal over the public internet within this Target Service Commencement Date. However, where the Cloud Storage S4 Service is also part of a solution involving Connectivity Services and/or VDC Services, access to the Cloud Storage S4 Service shall also be dependent upon the lead times for the Connectivity Services and/or VDC Services.*

4. Cloud Storage S4 Service Level Agreement

Availability

The Cloud Storage S4 Service is considered available at the Cloud Storage S4 SDP if the Partner/End User is able to access the Stored Data at the Zone in the case of Single Zone configuration or at either Zone in the case of Dual Zone configuration.

Zones	Availability
Protected Zone	99.99%
Geo-Replicated Zone	99.999%

Durability

Exponential-e uses the Markov Chain data durability model to calculate data durability.

Durability is defined as the 1 - average annual expected loss of data objects as a percentage. The calculation is:

Total objects = Total storage/ Avg. object size

$P(\text{Object loss per year}) = 1 / ((\text{mean time to data loss (MTTDL)} * \text{Total objects}))$

$\text{Durability} = 1 - P(\text{Object loss per year})$

Durability is measured across both Zones in the case of a Dual Zone configuration.

Zones	Durability
Protected Zone	99.999998%
Geo-Replicated Zone	99.999998%

Service Credits

	Measure	Service Credit*
Availability	Below Target	5%
	>0.1 Below Target	10%
	>0.2 Below Target	20%

	Measure	Service Credit*
Durability	Below Target	5%
	>0.1 Below Target	10%
	>0.2 Below Target	20%

* The service credit is applied as a percentage of the Monthly Charge for the Cloud Storage S4 Service for the month concerned. Monthly Charge is the Annual Charge divided by 12 and/or any Usage Charges payable for the month concerned (where applicable).

5. Rate Card

The Rate Card for Cloud Storage S4 is available upon request from sales@exponential-e.com.

6. Data Processing

When Exponential-e provides the Cloud Storage S4 Service, this may result in Exponential-e Processing Partner Personal Data. The following applies to the Processing of such Personal Data by Exponential-e:

Subject Matter of Processing

The Personal Data (if any) that the Partner / End User stores within the Cloud Storage S4 Service.

Username, email addresses and passwords used in conjunction with the Service and/or the Service portals.

Nature of the Processing

In respect of Personal Data within the Stored Data, storage only. Exponential-e will not block, delete, correct, pseudonymise or encrypt the Stored Data. Exponential-e has no responsibility for data accuracy.

In respect of usernames, email addresses and passwords used in conjunction with the Services and/or Service portals, collection, logging and storage.

Return of Personal Data

Exponential-e will not extract the Partner Personal Data from the Stored Data and return it to the Partner / End User. The Partner / End User shall remain responsible for removing all the Stored Data as per Clause 6.5.2.1 of the Additional Terms for Cloud and IT Services set out in this Service Document.

Appropriate Technical and Organisational Measures

The Partner agrees that as far as it is concerned the security measures set out in the Contract and Exponential-e’s maintenance of (a) the ISO27001 (Information Security Management) standard and (b) the CSA: Star Cloud standard (or any replacement or equivalent of either subsisting from time to time) (collectively the “Security Measures”) fulfils the requirement of appropriate technical and organisational measures and the Partner agrees not to contend otherwise, recognising that the Charges for the Cloud Storage S4 Service directly relate to the Security Measures to be applied.